Comparison of benthic foraminiferal and macrofaunal responses to organic pollution in the Firth of Clyde (Scotland)

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Résumé en anglais	By comparing benthic foraminiferal and macrofaunal responses to sewage sludge disposal in the Firth of Clyde (Scotland), we wanted to investigate the possibility of using foraminifera as bio-indicators of marine environmental degradation. Both groups present a similar distributional pattern, with poor faunas composed of species tolerant to strong oxygen depletion near to the disposal site, surrounded by high density of opportunistic species. Farther away, faunal density decreases and equilibrium taxa gradually replace opportunistic species. No more environmental impact is perceptible beyond 3 km. Nevertheless, some differences exist: foraminifera appear to be more impacted at the disposal site, probably as a consequence of the low pH, a supplementary stress factor for organisms provided with a calcareous test. At 3 km west of the disposal site, macrofauna is comparable to the reference station, whereas foraminifera still indicate environmental degradation, suggesting their higher sensitivity to this type of pollution. It appears that benthic foraminifera may add valuable information to open marine environmental monitoring.
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